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[redacted] report on the metallurgical and electrotechnical industry in Poland. The report contains the following: a tabulated breakdown of all foundry facilities in Poland [redacted] information on foundries under construction or expansion and those planned for future construction; production capacities in tons per year; other miscellaneous data.

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THE METALLURGICAL AND ELECTROTECHNICAL INDUSTRY IN POLAND (C)

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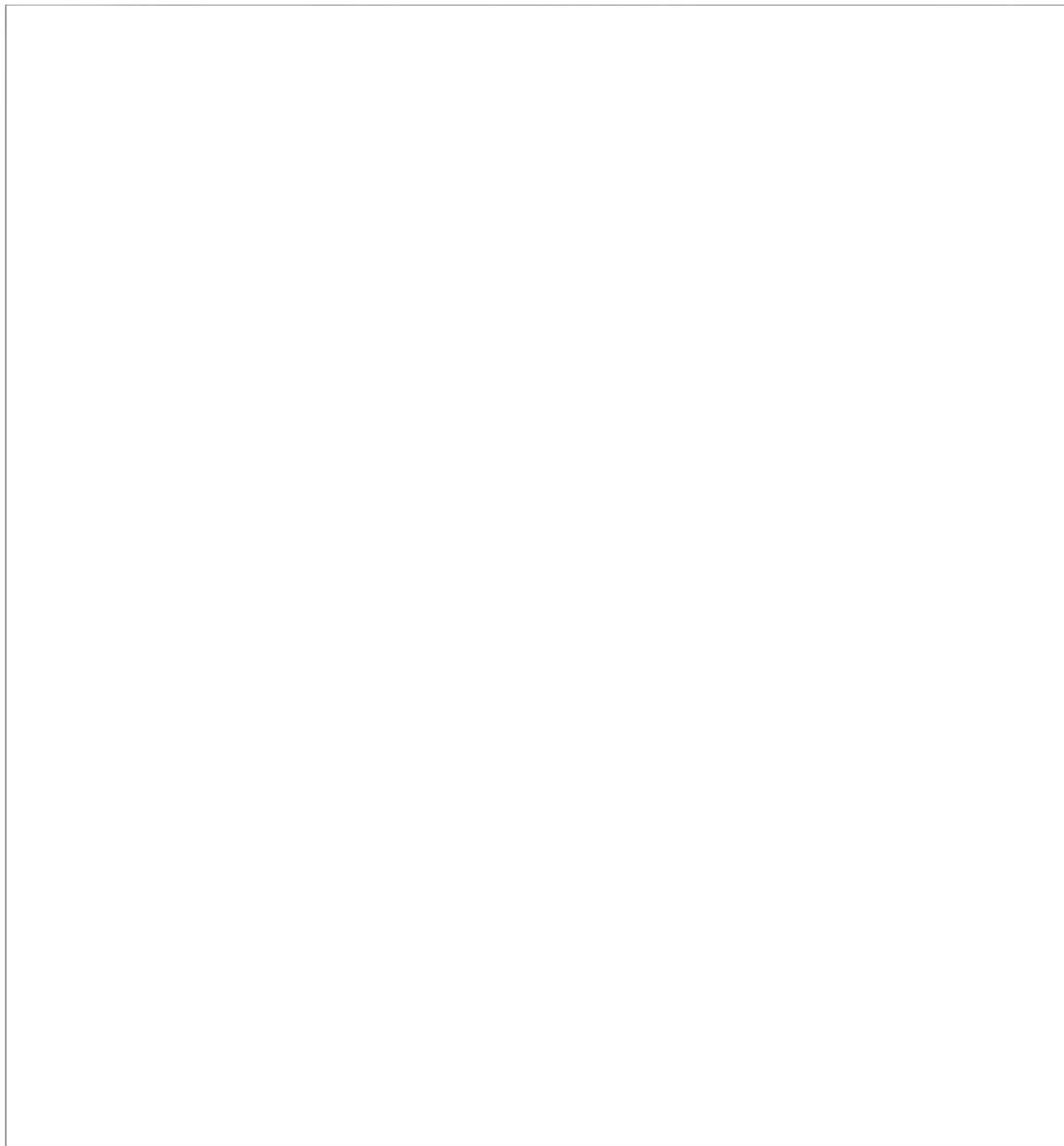
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Listed below are the names, geographic coordinates, and UTM coordinates of locations used in this report:

Location	Geographic	UTM
ANDRYCHOW	N49-51, E19-21	CA-8124
BLACHOWNIA	N50-47, E18-58	CB-566285
CZESTOCHOWA	N50-48, E19-07	CB-6831
GORZOW	N51-02, E18-26	CB-193565

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Location	Geographic	UTM
KIELCE	N50-52, E20-37	DB-7436
KONSKIE	N51-12, E20-25	DB-5971
MNISZEK	N53-29, E18-37	CB-415285
MYSZKOW	N50-35, E19-21	CB-824045
NIEKLAN	N51-11, E20-37	DB-735698
NOWA HUTA	N50-02, E20-04	DA-3448
NOWA SOL	N51-48, E15-43	WT-4939
OLAWA	N50-57, E17-19	XS-6250
OZIMEK	N50-41, E18-13	CB-028172
PIOTRKOW	N51-24, E19-42	DB-0996
PLOCK	N52-32, E19-42	DD-1122
PODKANOW	N51-22, E21-06	EB-073897
PRUSZKOW	N52-09, E20-49	DC-8679
RZESZOW	N50-02, E22-00	EA-7144
SKARZYSKO KAMIENNA	N51-08, E20-52	DB-9163
STALOWA WOLA	N50-34, E22-04	EB-7402
STARACHOWICE	N51-04, E21-04	EB-0456
STAROLEKA	N52-22, E16-57	XU-3204
TARNOW	N50-00, E21-00	DA-9940
URSUS	N52-12, E20-53	DC-925835
WEGIERSKA GORKA	N49-36, E19-08	CV-648965
ZABRZE	N50-19, E18-37	CA-4275
ZAWIERCIE	N50-30, E19-26	CA-8794

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THE METALLURGICAL AND ELECTROTECHNICAL INDUSTRY IN POLAND 50X1-HUM

1. THE METALLURGICAL AND ELECTROTECHNICAL INDUSTRY IN POLAND.

A. Background

The metallurgical and electrotechnical industry was part of the field of heavy industry, subordinate to the Ministry of Heavy Industry since 1956. It included all major metallurgical facilities such as foundries, smelters, and metal works, and all factories of the electrotechnical industry. Before 1956, the metallurgical and electrotechnical industry was not controlled and directed by one ministry but was divided among three: the Ministry of Metallurgy (Ministerstwo Hutnictwa); the Ministry of Machine Building Industry (Ministerstwo Przemyslu Maszynowego); and the Ministry of Automotive Industry (Ministerstwo Przemyslu Motoryzacyjnego), each of which had portions of the over-all industry under its control. In 1955 and 1956, the ministerial system in Poland underwent considerable revision and the three ministries were combined to form the new Ministry of Heavy Industry. All factories and other facilities belonging to any of the three ministries mentioned above were transferred to the Ministry of Heavy Industry, to which most of the major metallurgical and electrotechnical facilities became subordinate.

Since WW II, Poland as well as other Communist Bloc countries had concentrated its efforts on the expansion of heavy industry, of which the metallurgical and electrotechnical industry was one of the most important phases. Sizable portions of the national budget were allotted to construction, expansion, and modernization of factories, smelters, and foundries, all decisive factors in the building of a war machine and a stable economy. This expansion continued at a steady pace with seemingly no end in sight until 1956, when a special commission (Komisja Bilansow) was called by the vice-premier of heavy industry, JAROSZEWICZ. The commission was to make a study (opracowanie) of the expansion of the industry in order to determine exactly what form further expansion should take in the ensuing 10 to 15 years. The complete findings of the commission were unknown.

██████████ metal foundries (odlewnictwo), he was completely oriented and the information appears in detail with the discussion of each type of metal foundry in this report. In general, the commission decided to increase steel foundry production 76,000 tons yearly by 1965; to increase gray cast iron foundry production 107,000 tons yearly by 1970; to increase malleable cast iron foundry production 12,000 tons yearly by 1962; not to increase aluminum and colored metal foundry production; and to increase the production of special alloy metals to 600 tons yearly by 1975. Whether these increases were to affect only production capacities or actual production was not clear

██████████ but it was his opinion that in most cases it would affect actual production. These increases included plans for expansion which had already been planned before the commission met and also further plans for expansion recommended by the commission. Altogether, this expansion included the construction of 15 new foundries. (For detailed enumeration, see the sections entitled, "Foundries Planned for Future Construction").

██████████ no new foundries were planned for construction specifically for armament production. The trend was definitely from armament to civilian production.

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B. Foundry Facilities in Poland.

(1) Steel Foundries in Poland 3

The special commission called in 1956 by JAROSZEWICZ found that, to meet the ever growing need for steel in Poland, steel production should be increased 76,000 tons yearly by 1965. This was to be accomplished by the construction of one new foundry in PIOTRKOW with a capacity of 12,000 tons yearly (see paragraph B (1) (b)); the expansion of the Malapanew Steel Foundry in OZIMEK to increase the capacity by 6,000 tons yearly (see paragraph B (1) (b)); the construction of a new foundry in SZCZECIN (capacity 7,000 tons yearly); the construction of a new foundry in GDANSK (capacity 6,000 tons yearly); the construction of a new foundry in OLAWA (capacity 5,000 tons yearly); and the construction of five new foundries with capacities of 8,000 tons each, the locations of which were unknown because they had not been chosen to December 1958 (see paragraph B, (1), (c) for all unreferenced foundries mentioned above.) The five new 8,000-ton-capacity foundries above were each to be equipped with two Polish electric arc furnaces of 6-ton capacity; these furnaces were scheduled for production starting in 1960. (The producing factory was unknown [redacted]).

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(a) Existing Steel Foundries in Poland

The existing steel foundries [redacted] shown in Annex A, represent a total yearly production capacity of 109,000 tons. 50X1-HUM This total is not the true total of all such facilities in Poland, as is pointed out in comment number three; it is merely the total capacity of the foundries listed. In column one the name and general location of the foundry are given; those [redacted]

Column two gives the projects bureau which made the plans for the construction of the foundries. Column three gives the date the actual construction was completed and does not in every case coincide with the planned date of completion; in fact, [redacted] no case where a project was completed exactly on scheduled time; it was very common for these projects to run from three months to one year behind schedule. Column four gives the production capacity of each foundry in tons yearly. This figure did not in every case represent the actual yearly production, which frequently was less than the capacity. Column five, remarks, gives any other information about the foundry [redacted] such as type of production, for whom produced, and any other pertinent information.

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(b) Steel Foundries Under Construction or Expansion in Poland

[redacted] only two steel foundries on which there was any work being done as of December 1958; a new foundry, in PIOTRKOW, and the expansion of existing facilities at the Malapanew Steel Foundry. Both of these projects were part of the over-all increase-of-steel-production program initiated by the findings of the special commission (Komisja Bilansow) of the Ministry of Heavy Industry. The information in Annex B is self explanatory.

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(c) Steel Foundries Planned for Future Construction in Poland

Annex C shows the steel foundries planned for construction in the future. [redacted] no work had begun on any of the foundries listed in the table to December 1958. [redacted] the dates given in column three were optimistic and [redacted] most probably none of the projects would be completed on time. [redacted] however, [redacted] all the projects shown in the table would be realized sometime in the future. The information in Annex C is self-explanatory.

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(d) Costs of Construction and Expansion of Steel Foundries

the projected costs for orientation purposes for the construction of new steel foundries or expansion of existing facilities were figured on the basis of 5,000,000 zlotys per 1000 tons of steel to be produced. (These figures are based on price levels for 1958 - w cenach 1958). This amount included all costs, construction of buildings and installation of equipment, and purchase of equipment. About 50 percent of this amount was considered to be for purchase of machines and equipment, and 50 percent for construction of buildings and other fixed property and installation of machines and equipment.

According to the above formula, the Polish government would spend about 380,000,000 zlotys (w cenach 1958) (76 x 5,000,000 zlotys) to complete the steel expansion program amounting to 76,000 tons.

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the Myszkow Steel Foundry in MYSZKOW. the total cost was 320,000,000 zlotys (w cenach 1954). Of that, 52 percent was for machines and equipment, 12 percent was for installation of machines and equipment, and 36 percent was for construction. This made a total of 48 percent for construction and installation of machines and equipment, and 52 percent for cost of machines and equipment

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Note: Prices of specific items of machinery and equipment are discussed in paragraph B (6), "Foundry Equipment."

(2) Gray Cast Iron Foundries in Poland

The special commission called in 1956 by JAROSZEWICZ found that the production of gray cast iron should be increased 107,000 tons yearly by 1970. This was to be accomplished by the construction of five new foundries (see section of this report concerning gray cast iron foundries for construction in the future), and the expansion of two existing foundries. (See section of this report concerning gray cast iron foundries undergoing expansion or modification in Poland). In December 1958, the major gray cast iron foundries in Poland had a total production capacity of 178,000 tons yearly. If the expansion program were completed, by 1970 the production capacity would amount to 285,000 tons yearly.

none of the new foundries was to be for military production.

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(a) Existing Gray Cast Iron Foundries in Poland

The existing gray cast iron foundries shown in Annex D, represent a total production capacity of 178,000 tons yearly. this represented a very accurate picture of the production of the major foundry facilities. there were gray cast iron foundries (not included in Annex D,) but they were very small and in most cases were under the jurisdiction of local industrial authorities. not estimate the total production of these small foundries but it was very small and played no real part in the over-all national economy.

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(b) Gray Cast Iron Foundries Undergoing Expansion or Modification

[redacted] only three foundries on which there was any work 50X1-HUM being done as of December 1958. Two of the foundries were being expanded and one was being modified, causing a reduction in production capacity of 2,000 tons yearly. All three projects were being conducted under the expansion program set forth by the special commission of the Ministry of Heavy Industry. There were no new gray cast iron foundries under construction in Poland as of December 1958. The information in Annex E is self-explanatory.

(c) Gray Cast Iron Foundries Planned for Construction in the Future

Annex F shows the foundries planned for construction in the future. [redacted] no work had begun on any of these foundries as of December 1958. [redacted] therefore, [redacted] many of the projects would not be completed on time. [redacted] no new foundries which were being planned for military production. The information in Annex F is self-explanatory.

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(d) Costs of Construction and Expansion of Gray Cast Iron Foundries

The projected costs for orientation purposes for the construction of new gray cast iron foundries or expansion of existing facilities were figured on the basis of 4,000,000 zlotys per 1,000 tons of cast iron to be produced ((These figures were based on the price levels for 1958 - wczesna 1958). This amount included all costs, construction of buildings and installation of equipment, and purchase of equipment. Polish engineers figured that about 50 percent of the total cost of a project would be expended on construction and installation of equipment, and the other 50 percent for purchase of machines and equipment.

According to the above formula, the Polish government would spend about 428,000,000 zlotys (wczesna 1958) (107 x 4,000,000 zlotys) to complete the present expansion program amounting to 107,000 tons.

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(3) Malleable Cast Iron Foundries in Poland

The special commission of the Ministry of Heavy Industry found that the production of malleable cast iron should be increased 12,000 tons yearly by 1962. This was to be accomplished by the construction of a new foundry in PODKANOW near RADOM, on which work began in late 1958.

In December 1958, the major malleable cast iron foundries had a total production capacity of 39,000 tons yearly. When the expansion program was completed, the total production capacity was to be 51,000 tons yearly. None of these foundries was for military production. [redacted] no [redacted] other malleable cast iron foundries planned for construction in the future, and [redacted] none was planned for the next two to five years.

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(a) Existing Malleable Cast Iron Foundries in Poland

The malleable cast iron foundries listed in Annex G were the only such foundries in Poland, and [redacted] there were no small independent foundries of this type. The figure, 39,000 tons yearly, represented the total production capacity in Poland. The information in Annex G is self-explanatory.

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(b) Malleable Cast Iron Foundries Undergoing Construction in Poland

Source knew of only one malleable cast iron foundry under construction in Poland as of December 1958. Its capacity, 12,000 tons yearly, would fulfill the expansion requirements of the special commission of the Ministry of Heavy Industry. Information on the foundry is given in Annex H.

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(c) Costs for Construction and Expansion of Malleable Cast Iron Foundries in Poland

The cost figures for malleable cast iron foundries were about the same as for gray cast iron foundries (see paragraph 1 B, (2)).

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(4) Aluminum and Colored Metal Foundries in Poland

The special commission of the Ministry of Heavy Industry did not recommend that any new aluminum or colored metal foundries be constructed in Poland. [] the present capacity of the existing facilities was sufficient if enough ore could be made available so that they could be utilized to their full capacity. Often [] Poland could import the colored metal more easily than ore which had to be processed.

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[] import of colored metals was possible only from the West, never from any of the Communist Bloc countries. There was nearly always a shortage of ore, which prevented the foundries from working at full capacity.

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Listed in Annex I are the aluminum and colored metal foundries []

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(5) Special Steels, Nonferrous Metals, Special Alloys, and Nonferrous Metal Products

Most of such products were made for the radio tube industry (przemysl lampowy), electrotechnical industry (przemysl elektrotechniczny), automotive industry (przemysl motoryzacyjny), precision industry (przemysl precyzyjny), and the optical industry (przemysl optyczny). These products included such metals and metal products as wolfram (tungsten), for use in wolfram alloyed steel; molybdenum; nickel and nickel alloys; iron alloys used in the production of electromagnets; foils of all types, especially aluminum foils; and similar items.

In 1958 the total need for all such products amounted to about 300 tons yearly. [] only part of the total need was produced in Poland; the rest was imported. [] import of such products was possible only from Western nations; it was virtually impossible to import them from other Communist Bloc countries.

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The special commission of the Ministry of Heavy Industry predicted that by 1975 Poland would need about 600 tons of special alloys (stopy specjalne) yearly. [] the only place where such special alloys were produced in Poland was Huta Baldon in KATOWICE, []

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[Redacted]

(6) Foundry Equipment in Use in Poland

(a) Furnaces

1 Cupola Furnaces (Zeliwiaki) - These furnaces, used for the production of carbon steel, were produced in Poland in eight standard diameters: 300 mm; 600 mm; 700 mm; 800 mm; 900 mm; 1000 mm; 1200 mm; and 1500 mm. They were manufactured in the Foundry Equipment Factory in NOWA SOL (Fabryka Urzadzen Odlewniczych w Nowej Soli). There was always a 6-month waiting period after an order was placed before it was filled, but the furnaces were produced in sufficient numbers for domestic use.

[Redacted] the domestic prices for three sizes of cupola furnaces: the 300 mm-diameter furnace cost 45,000 zlotys; the 700 mm-diameter furnace cost 200,000 zlotys; and the 1500 mm-diameter furnace cost 320,000 zlotys (all prices were according to price levels of 1958 and included complete installation). [Redacted] they were good furnaces, well constructed.

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2 Open-Hearth Furnaces (Marteny, Piece Martenowskie)

Open-hearth furnaces were made in Poland, but because of the size and height of the smokestack they were erected on the construction site rather than manufactured in quantity at a factory. There were no standard sizes and capacities for these furnaces, and the costs varied widely, depending on these factors. These furnaces were constructed in about the same manner the world over. [Redacted]

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3 Electric-Arc Furnaces (Piece Elektryczne Lukowe)

Electric-arc furnaces were not produced in Poland but production of them was planned in the future, in four standard sizes: 1½-ton, 3-ton, 6-ton, and 10-ton capacity. The prototypes for the 1½-ton and the 6-ton capacity furnaces were to be ready by mid-1960.

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These two prototypes were being copied from a [Redacted] 5-ton electric-arc furnace (name of manufacturer unknown), four of which Poland had purchased in 1956 or 1957 for \$20,000 each. The Polish 6-ton model was to sell for 650,000 zlotys and the cost of installation was to be about 200,000 zlotys, altogether 850,000 zlotys. In 1958, a similar [Redacted] model was selling for \$85,000 (exact name and manufacturer was unknown).

Since 1952, Poland had imported about ten electric-arc furnaces from the USSR, 3- and 4-ton models. Polish foundry engineers, however, preferred the [Redacted] models to the Soviet types for reasons of efficiency and design.

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4 Induction Furnaces (Piece Indukcyjne)

Induction furnaces were of two types, high-frequency (piece indukcyjne wysokiej czestotliwosci) and low-frequency (piece indukcyjne niskiej czestotliwosci). Neither type was produced in Poland.

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[Redacted] there were two or three old German types (capacities unknown) and about three which had been imported from [Redacted] (date of import unknown).

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the furnaces were very
expensive.

5. Crucible Furnaces (Piece Tyglowe)

Various types of crucible furnaces were produced in Poland at the Foundry Equipment Factory in NOWA SOL. This factory produced both gas and electric models (capacities unknown). [redacted] a crucible furnace (either gas or electric) with a capacity of 100 kg of copper (na 100 kg miedzi) cost 75,000 zlotys complete with installation (w cencach 1958). Graphite crucible furnaces were also produced at the same factory (cost and production capacity unknown) [redacted]

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6. Resistance Furnaces (Piece Oporowe)

Resistance furnaces for aluminum were not produced in Poland. [redacted] there were some (about four) in Poland, which were Soviet models with capacities from 500 kg to 3 tons. [redacted] the Polish engineers considered them very good.

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7. Automatic Furnace Controls

[redacted] there were no automatic furnace controls 50X1-HUM manufactured in Poland. [redacted] Poland imported them from Sweden and Switzerland and that they were very expensive (exact costs unknown).

The

size of the moulding box (skrzynka formierska) ranged from 570 mm to 720 mm. Its domestic cost was about 65,000 zlotys and it was produced at the Foundry Equipment Factory in NOWA SOL.

Poland had also imported moulding machines, Herman type, from the USSR. [redacted] the Polish engineers complained of their being too heavy.

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There was a West German moulding machine, diaphragm type (formierka membranowa), which was strongly sought by Polish foundry engineers. To December 1958, Poland had been unsuccessful in attempts to import it. It had been observed by the Poles at a trade fair (location and date unknown) [redacted] Poland would probably buy two or three of them from [redacted] if possible, and copy them for her own production.

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(c) Pressure Die Casting Machines (Maszyny do Odlewania pod Cisnieniem)

There were no pressure die casting machines produced in Poland to December 1958.

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Poland had imported these machines from the USSR and Czechoslovakia (numbers and exact dates of import unknown). 50X1-HUM
 About 1957, Poland imported several (number unknown) pressure die casting machines, brand name "Polak," from Czechoslovakia. 50X1-HUM
 They varied in size and their costs ranged from 200,000 to 600,000 zlotys (w cenach 1957).

The casting machines imported from the USSR were considered very good, but the Polish engineers complained about their being too heavy, a disadvantage compared to the Czechoslovakian models, which were much lighter and every bit as efficient.

(d) Grinding Machines (Szlifierki do Czyszczenia Odlewów)

Only very small, simple grinders were produced in Poland. Grinders for foundry and factory use were imported from the USSR and East Germany. 50X1-HUM
 Poland paid from 40 to 50,000 zlotys for them.

(e) Machine Tools (Obrabiarki)

very little information about machine tools such as gear-making machines (maszyny obrobki kół zębatych), drilling machines (wiertarki), planing machines (strugarki), lathes (tokarki), milling machines (frezarki), threading machines (winciarki), and others. 50X1-HUM
 gear-making machines, precision-drilling machines, and other precision machine tools were either not produced in Poland or produced in insufficient quantities. 50X1-HUM
 Poland imported such machines from [redacted] and a few from Czechoslovakia. 50X1-HUM
 Generally speaking, there was a lack of such machine tools in Poland and the Communist Bloc countries. It was virtually impossible to get such machines within the Communist Bloc; it was absolutely impossible to get them from the USSR.

The Poles were very anxious to get a pipe-threading machine which was manufactured in [redacted] 50X1-HUM
 its cost in 1958 was \$12,000. Poland would buy two or three and then copy them for her own production. He had no further information. 50X1-HUM

(f) Nonstandard Foundry Equipment (Urządzenie do Odlewów Nietypowe)

Nonstandard equipment included such items as wagons used for intra-factory transport, conveyors of all types, special furnace feeding devices, and other such equipment which was produced for a particular foundry, according to its production organization and plant layout.

Such equipment was produced mainly at the Foundry Equipment Factories in NOWA SOL and KRAKOW. The factory at NOWA SOL was the main factory and the one in KRAKOW was a small one which was directly supervised by the Central Office of Foundry Equipment (Centralne Biuro Urządzeń Odlewniczych), 12 also located in KRAKOW.

Prices for nonstandard equipment were based on weight and ranged from 15 to 25 zlotys per kilogram (w cenach 1958) depending on the complexity of the item. For example, intra-factory transport equipment was often nonstandard [redacted] a foundry with a capacity of 15,000 tons 50X1-HUM

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yearly required about 4,000,000 zlotys of such equipment. This figure included many items of standard equipment such as fork-lift trucks and overhead cranes, but much of the cost was attributed to the special production of nonstandard equipment.

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the domestic cost for one model (model and capacity unknown, battery-run) was 12,000 zlotys. The price for a 5-ton overhead crane (suwnica) was 350,000 zlotys.

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(7) Adequacy of Metals, Raw Materials, and Equipment

About the only thing that was in constant sufficient supply was foundry sand (piasek formierski) of all types. Most other supplies and raw materials were at a premium. For example, there was never enough of such ores as iron (rudy zelaza) and bauxite (bauksyt) or such metals as aluminum, copper, tin, manganese, molybdenum, wolfram, nickel, and their various alloys. Poland imported all the iron ore and bauxite it could from the USSR, and still there was not enough to keep all the foundries operating at full capacity.

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shipments of ore from the USSR were spasmodic, making it very difficult to plan ahead when they never knew when or in what quantities shipments were to arrive. Poland was trying to stockpile iron ore in an attempt to stabilize its flow to foundries,

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Items such as fork-lift trucks and other intra-factory transport equipment, electric-arc furnaces, induction furnaces, grinding machines, precision-drilling machines and other precision machinery were among the equipment most needed and most difficult to obtain for foundries in Poland.

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(a) Foundry Equipment

The foundry equipment produced in Poland was generally good and reasonably priced, but simple in construction and among the less-complicated types of foundry equipment. Most of the more complicated machinery had to be imported and although, if available, it could be purchased more cheaply and easily from the USSR, Polish engineers preferred to import it from the West. Generally, Polish engineers displayed the following preferences for foundry equipment: first, domestically produced equipment if available; second, import from the West

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third, import from the Communist Bloc countries other than the USSR (East Germany, Czechoslovakia, Hungary); and fourth, import from the USSR.

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Soviet equipment was always too heavy, too crudely made, very often designed for large-scale mass production, unsuited for a small country like Poland, and therefore too impractical.

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(b) Efficiency of Foundry Production

Foundry production efficiency compared favorably to other industrial activities in Poland. this efficiency had to be considered in context, because many of the foundries used old pre-WW II methods and machines and by their own standards were quite efficient. Others were partly mechanized and still others were completely equipped with modern equipment.

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There were many factors to be considered in discussing efficiency. First, the shortage of experienced foundry engineers, foundry technicians, skilled laborers, and foremen consistently harassed the industry. This was partly due to the relatively undesirable aspects of the work itself and partly due to low wage scales. Skilled laborers earned from 2000 to 2500 zlotys a month, which, compared to their counterparts in the mining industry, was low.

Morale among workers in general was very low in Poland, and this was no less valid for workers in the metallurgical and electrotechnical industries. The low morale was caused by political tensions, economic unrest, low standard of living, and a clearly observable lack of faith that there would be relief in the future. The general attitude of the people was one of cynicism, which showed itself in work output per man that was considerably lower than anywhere in the West. [redacted]

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TABLE OF STEEL FOUNDRIES IN POLAND

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TABLE OF STEEL FOUNDRIES IN POLAND

NAME AND LOCATION	PLANNING BUREAU	DATE OF COMPLETION	PRODUCTION CAPACITY	REMARKS
IN TONS PER YEAR				
Steel Foundry in KIELCE	BPBS	1947	6,000 tons	The foundry was expanded to its present capacity in 1953 and was under consideration for further expansion. To December 1958, however, nothing definite had been decided. It produced solely for the military - mines, weapons parts, and parts for artillery pieces. Details of production were unknown
Myszkow Steel Foundry in MYSZKOW	BPBS	1955	24,000 tons	The full production capacity of the foundry was not being exploited in December 1958 and was not planned to be fully exploited until 1962.
Malapanew Steel Foundry in OZIMEK	Prozamet	1946	24,000 tons	The foundry produced, for the railway industry, steam engines and railroad cars.
Foundry A (Hala A)				Part A of the foundry produced, for civilian consumption, special steel for domestic use and export (details on export were unknown). The full capacity of 24,000 tons was to be reached for the first time in 1959.
Foundry B (Hala B)	BPBS	1952	18,000 tons	Part B produced, only for the military, special steel of a very high grade (details of disposition were unknown). In 1958, production amounted to 13,000 tons. The full capacity of 18,000 tons was to be realized for the first time in 1959.
POMET Steel Foundry in POZNAN	Prozamet	1955	30,000 tons	It would not be realized until 1960 at the earliest because of the lack of trained workers for the foundry.
Steel Foundry in STALOWA WOLA	BPBS	1948	7,000 tons	The full production capacity was not to be realized until 1959. The foundry produced, for the railway industry, steam engines and railroad cars.
				The full capacity (7,000 tons) has been produced since 1952. The foundry produced only for the military - tubes for artillery pieces.

ANNEXY D
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STEEL FOUNDRIES UNDER CONSTRUCTION OR EXPANSION IN POLAND

NAME AND LOCATION	PLANNING BUREAU	DATE TO BE COMPLETED	PLANNED PRODUCTION CAPACITY IN TONS PER YEAR	REMARKS
Steel Foundry in PIOTRKOW	BPBS	1959	12,000 tons	The foundry was to be in operation in 1959 but the full production capacity was not to be realized until 1962. It was to produce mining machines for the mining machine industry.
Malapanew Steel Foundry in OZIMEK (Foundry A - Hala A)	Prozamet	1960	30,000 tons	This work concerned the expansion of foundry A, which produced for civilian consumption, to increase the production capacity from 24,000 tons yearly to 30,000 tons yearly. The extra 6,000 tons was to be in ingots for use at other factories. Foundry A in 1958 produced special steel for domestic use and rollers of various types for export.

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NEW STEEL FOUNDRIES FOR FUTURE CONSTRUCTION IN POLAND

NAME AND LOCATION	PLANNING BUREAU	DATE TO BE COMPLETED	PLANNED PRODUCTION CAPACITY IN TONS PER YEAR	REMARKS
Steel Foundry in SZCZECIN	Prozamet	1959	7,000 tons	This foundry was to produce for the ship-building industry in and around SZCZECIN. Although this foundry was scheduled to be completed in 1959, it was to have Soviet electric furnaces (type and size unknown).
Steel Foundry in or near GDANSK	Prozamet	1965	6,000 tons	This foundry was to produce for the ship-building industry in and around GDANSK. It was to be similar to the one to be constructed in SZCZECIN.
Steel Foundry in OLAWA	Prozamet	1962	5,000 tons	It would not be before the completion of the foundry in SZCZECIN. It was to have electric furnaces (type and size unknown).
Steel Foundry (location unknown to December 1958)	Prozamet	1960	8,000 tons	The plans for the project were completed in 1958 so actual construction could begin any-time. Its production was to support the repair of railroad rolling stock - engines and railroad cars. It was to be located on the terrain with the railroad rolling stock repair shop in OLAWA (Warsztat w OLAWIE).
Steel Foundry (same as above)	Prozamet	1960	8,000 tons	The project has been ready since 1957. The completion date (1960) was according to the original plan; it would not be completed on time.
Steel Foundry (same as above)	Prozamet	1960	8,000 tons	Same as above.
Steel Foundry (same as above)	Prozamet	1965	8,000 tons	Same as above.
Steel Foundry (same as above)	Prozamet	1965	8,000 tons	Same as above except completion date was originally 1965.
Steel Foundry (same as above)	Prozamet	1965	8,000 tons	Same as above.

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NAME AND LOCATION	PLANNING BUREAU	DATE OF COMPLETION	PRODUCTION CAPACITY IN TONS PER YEAR	REMARKS
Cast Iron Foundry at BLACHOWNIA	Prozamet	1950	16,000 tons	It produced sewer pipes and cast parts for meat-cutting machines. The foundry was expanded after WW II and was being remodeled in 1959.
Cast Iron Foundry at GORZOW	Prozamet and BPBS	1947	13,000 tons	This was a very old foundry, which was rebuilt after WW II. It was very badly equipped with outdated machinery. It produced for the building machine industry and some spare parts for tractors and tanks. The spare parts production portion of the project was planned by BPBS.
Cast Iron Foundry in KONSKIE	Prozamet	1945	6,000 tons	Its production was entirely civilian: kitchen utensils and metal worktable coverings. The foundry was expanded to its present size in 1955; the project was handled by Prozamet.
Cast Iron Foundry in LODZ	Prozamet	1953	12,000 tons	The foundry had worked since 1954, after having been rebuilt after WW II. It produced circulating radiators for home heating and furnace water coils.
Cast Iron Foundry in LODZ	Prozamet	1945	3,000 tons	This was a very old foundry equipped with outdated equipment, which produced for the automotive industry. Production included such things as spare parts for small engines like motor bicycles and motorcycles.
Cast Iron Foundry in LODZ	Prozamet	1945	5,000 tons	This was a very old foundry (before WW II it was called "John"), which was rebuilt after WW II. It produced for the machine tool industry - parts and assemblies for wood and metal lathes.
Cast Iron Foundry in LUBLIN	Prozamet	1956	30,000 tons	Although the foundry was finished in 1956, it did not start working until 1957. It was constructed from a Soviet foundry plan. It produced cast parts for motors (details unknown)

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NAME AND LOCATION	PLANNING BUREAU	DATE OF COMPLETION	PRODUCTION CAPACITY IN TONS PER YEAR	REMARKS
Cast Iron Foundry in MNISZEK	BPBS	1959	15,000 tons	The factory was originally to be for production of bombs for the military (type and numbers unknown), but only a part of the production was for bombs. The foundry's major production was domestic stoves, pumps, and cast spare parts for them. The foundry was being expanded in 1959. (See section B (2) (c) of this report.)
Cast Iron Foundry in NIEKLAN	Prozamet	1945	6,000 tons	The foundry was originally constructed in 1945 but was expanded to its present capacity in 1956. Prozamet handled both projects. It produced plumbing fixtures such as circulating heating radiators, faucets, and other indoor plumbing fixtures.
Cast Iron Foundry in NOWA SOL	Prozamet	1949	8,000 tons	This was an old foundry rebuilt after WW II. It produced large sewer pipes and various cast parts for foundry equipment.
Cast Iron Foundry in PLOCK	Prozamet	1955	8,000 tons	This foundry was located with the agricultural machine factory in PLOCK. It produced cast parts for agricultural machines and tractor attachments.
Cast Iron Foundry in RADOM	See remarks	Pre-WW II	1,000 tons	This was an old pre-WW II foundry which was not destroyed during the war. It continued producing after the war in the same capacity: cast parts for small machines and uncomplicated equipment, used for repair rather than for new items.
Cast Iron Foundries in STARACHOWICE	Prozamet and BPBS	1952	18,000 tons	There were two separate foundries, designated "A" and "B," on the grounds of one factory. They both produced for the automotive industry - cast parts for cars and trucks, such as

(ANNEX D CONTINUED)

NAME AND LOCATION	PLANNING BUREAU	DATE OF COMPLETION	PRODUCTION CAPACITY IN TONS PER YEAR	REMARKS
STARACHOWICE (Con't)				motor blocks. Foundry "A" produced for civilian consumption and was planned by Prozamet. Foundry "B" produced for the military and was planned by BPBS.
Cast Iron Foundry in STAROLEKA	Prozamet	1954	6,000 tons	This was a new foundry since WW II. There were two sections, one listed here and a malleable iron foundry, (See section B (3) of this report.). It produced cast parts for the agricultural machine industry, and for tractor attachments.
Cast Iron Foundry in SKARZYSKO KAMIENNA	BPBS	1946	5,000 tons	This foundry was on the same terrain with the ammunition factory and was originally established as part of the factory repair facilities, only part being used for production - hand grenades. There has been no grenade production there since about 1955.
Cast Iron Foundry in TARNOW	See remarks	See remarks	1,000 tons	This was an old pre-WW II foundry which was not destroyed by the war. It was not connected with any factory facilities but was used as a repair foundry by the entire region around TARNOW.
Cast Iron Foundry at URSUS	BPBS	1947	12,000 tons	The foundry portion of the factory existed before WW II and had to be rebuilt after the war. This rebuilding was planned by BPBS because of the military importance of the tractor-prime-mover production of the factory. The expansion, remodeling, and reequipping completed in 1953, however, were planned by Prozamet. Since that time, the capacity of the foundry has been 12,000 tons per year.

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NAME AND LOCATION	PLANNING BUREAU	DATE OF COMPLETION	PRODUCTION CAPACITY IN TONS PER YEAR	REMARKS
Cast Iron Foundry in WARSAW	BPBS	1952	4,000 tons	This foundry was located on the terrain of the tank engine factory in the Wola district of WARSAW. It produced cast parts for tank engines and industrial engines. The foundry was under expansion in 1959. (See section B (2) (h) of this report.)

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NAME AND LOCATION	PLANNING BUREAU	DATE TO BE COMPLETED	PLANNED PRODUCTION CAPACITY IN TONS PER YEAR	REMARKS
Cast Iron Foundry in MNISZEK	BPBS	1960	26,000 tons (increase of 11,000 tons)	At the completion of the expansion, the capacity would be increased by 11,000 tons per year. The expansion included the construction of a new production hall. The old production hall was to be entirely devoted to production of bombs for the military. (Details of size and number of bombs unknown)
Cast Iron Foundry in WARSAW	None. The foundry was doing its own work of expansion and remodeling.	1959	9,000 tons (increase of 6,000 tons)	The increase in capacity of the foundry was to be 6,000 tons yearly. This was the foundry with the tank engine factory in the Wola district of WARSAW. The work of expansion included the installation of modern equipment for production of tank engines.
Cast Iron Foundry in BLACHOWNIA	Prozamet	1960	14,000 tons (reduction of 2,000 tons)	The work at this foundry included the building of a new machine shop, reequipping of the foundry itself, and a reorganization and reorientation of the production from pipes to household plumbing fixtures and cast parts for meat-cutting machines. The actual production of the foundry was to be reduced by 2,000 tons annually, because of the change in production and in foundry equipment

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ANNEX R
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GRAY CAST IRON FOUNDRIES UNDERGOING EXPANSION OR MODIFICATION IN POLAND

NAME AND LOCATION	PLANNING BUREAU	DATE TO BE COMPLETED	PLANNED PRODUCTION CAPACITY IN TONS PER YEAR	REMARKS
Brake Block Foundry in PRUSZKOW	Prozamet	1960	12,000 tons	The plans were completed in time for the actual construction to be finished on time (1960). There was a delay in the construction and the foundry would not be in full operation until 1962. It was to produce brake blocks for railroad cars of all types.
Brake Block Foundry in OLAWA	Prozamet	1965	8,000 tons	Construction on this foundry was not to start until the foundry in PRUSZKOW was completed. It was to produce the same types of brake linings. The project for the construction had been completed and was ready so that it could be started at any time.
Cast Iron Foundry in ANDRYCHOW	BPBS	1965	12,000 tons	The project for this factory had been ready since 1956. It was to produce cast parts for high-compression engines of 1 to 4 cylinders, both air and water cooled types. [redacted] the foundry would probably be completed on time.
Cast Iron Foundry (location not chosen to Dec 1958)	Prozamet	1965	30,000 tons	The Prozamet project bureau was working on this project in 1958. To December 1958 the location had not been selected. It was to produce sewer pipes of varying lengths and diameters.
Cast Iron Foundry (location not chosen to December 1958)	Prozamet	1970	30,000 tons	The Prozamet project bureau was working on this project in 1958. To December 1958, the location had not been selected. It was to produce sewer pipes of varying lengths and diameters. This foundry and the one above were sister projects and were to be similar in plan. [redacted]

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NAME AND LOCATION	PLANNING BUREAU	DATE OF COMPLETION	PRODUCTION CAPACITY IN TONS PER YEAR	REMARKS
Malleable Iron Foundry in BLACHOWNIA	Prozamet	1946	2,000 tons	This was a very small foundry which produced for the machine industry. This was part of the cast iron foundry in BLACHOWNIA but was in a separate building.
Malleable Iron Foundry in LUBLIN	Prozamet	1956	16,000 tons	The foundry was located on the grounds with the automotive factory (Fabryka Samochodow) in LUBLIN. It produced only for the automotive industry.
Malleable Iron Foundry in STAROLEKA	Prozamet	1952	10,000 tons	The foundry was located on the grounds with the agricultural machine factory (fabryka maszyn rolniczych) in STAROLEKA. This was a new foundry since WW II and had been in full production since 1953. It produced for the agricultural machine industry.
Malleable Iron Foundry in WEGIERSKA GORKA	Prozamet	1948	5,000 tons	This was a very old foundry, which existed before WW II and was remodeled after the war. It produced plumbing fittings - connections, elbows, caps, etc.
Malleable Iron Foundry in ZAWIERCIE	Pre-WW II	Pre WW II	6,000 tons	This was a very old foundry, which had existed since before WW II and was producing at full capacity at the end of the war. It produced for the agricultural machine industry and made blades for meat-cutting machines.

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 MALLEABLE CAST IRON FOUNDRIES UNDER CONSTRUCTION IN POLAND

NAME AND LOCATION	PLANNING BUREAU	DATE OF COMPLETION	PLANNED PRODUCTION CAPACITY IN TONS PER YEAR	REMARKS
Cast Iron Foundry in PODKANOW	Prozamet	1962	12,000 tons	Work was started on construction of the foundry in late 1958. [redacted] the foundry would be in operation on time (1962). It was to produce plumbing fittings - elbows, connections, caps, etc. This was the only malleable iron foundry under construction in Poland [redacted] It was to have special [redacted] machines (2-3) for use in the finishing and threading process.

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NAME AND LOCATION	PLANNING BUREAU	DATE OF COMPLETION	PRODUCTION CAPACITY IN TONS PER YEAR	REMARKS
Aluminum and Bronze Foundry in URSUS	PPBS	1955	1,500 tons aluminum alloy 1,000 tons copper alloy	The foundry produced mainly for the automotive industry but also an unknown amount was for the mining machine industry. This was a very old foundry, which was remodeled and expanded in 1955 (note column three).
Colored Metal Foundry in WARSAW	PPBS	1951	2,000 tons aluminum alloy 800 tons copper alloy	The foundry was located on the grounds of the Wola factory. It was new since WW II. Its production was solely for the military - tank engines, which were produced at the Wola factory.
Colored Metal	Soviet	1952	1,500 tons	This foundry was located on the grounds of the automobile factory in the Zeran district of WARSAW. It was planned by a Soviet project bureau (probably the Soviet counterpart of the PPBS) and the construction was supervised by Soviet specialists. Details of the planning and construction were unknown. It was a new foundry since WW II. It produced only for the automotive industry.
Colored Metal Foundry in RZESZOW	PPBS	1952	2,000 tons aluminum alloy 1,000 tons copper alloy	This was a new foundry since WW II. It produced only for the military (air force). All its production was for the airplane engine factory in RZESZOW. The foundry was located on the grounds with the airplane engine factory.
Aluminum and Magnesium Foundry in GORZOW	PPBS	1952	1,000 tons aluminum alloy unknown magnesium	This was a new foundry since WW II. It produced only for the military (air force). All its production was for the transportation equipment factory in GORZOW (Wytwornia Sprzety Komunikacyjnego - WSK GORZOW).

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3. Not included in the discussion on steel foundries are such foundries as Nowa Huta, at NOWA HUTA; Huta Bierut, in CZESTOCHOWA; Huta Zabrze, in ZABRZE; Huta Baldon, in KATOWICE; Huta Warszawa, in WARSAW

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they produced mainly ingots (wlewki) for use in production at other factories.

Because of the size of the foundries and the levels of skill of the local engineers employed in them, they undertook their own expansion programs without the aid of a project bureau, so unless one was employed at one of them, very little information could be gotten about them.

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11. it has been rumored that Huta Warszawa may take on such production,

it was logical and very possible because it is a reasonably new foundry with new modern equipment which would lend itself more readily to adaption to such production.

12. this office was subordinate to the Central Administration of Foundry Equipment (Centralny Zarzad Urzadzen Odlewniczych) in WARSAW.

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